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REMARKS

Claims 1-21, as amended, remain herein.

Claims 1-6, 10, 11, 15 and 17-19 have been amended more clearly to describe applicants' invention. Claim 21 has been amended to reword the preamble.

The Abstract has been revised.

Applicants respectfully request the Examiner to provide an initialed copy of PTO Form 1449 indicating receipt and consideration of references accompanying an Information Disclosure Statement filed January 6, 2000.

1. The preamble of claim 21 has been amended to refer to the method of claim 19.

2. Claims 1-21 were now rejected under 35 U.S.C. §103(a) over Kano et al. U.S. Patent 5,598,136 and Senda et al. U.S. Patent 5,197,170. Applicants respectfully traverse the rejection.

Kano et al. '136 was cited as allegedly disclosing a spiral coil conductor together with electrodes and insulation layers,

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as recited in applicants' claim 1. Kano et al. '136, Fig. 5, shows a "spiral" shaped conductor defining a path across a two-dimensional surface, and not a three-dimensional volume.

Webster's II New College Dictionary, page 1065, (copy enclosed) defines "spiral" as a curve on a two-dimensional plane that winds around a fixed center point at a continuously increasing or decreasing distance from the point, and also defines "spiral" as a three-dimensional curve that turns around an axis at a constant or continuously varying distance while moving parallel to the axis, i.e., a "helix". Thus, "spiral" is defined as meaning both a two-dimensional and three-dimensional curve.

Accordingly, claims 1-6, 10, 11, 15 and 17-19 have been amended to replace "spiral" with "helical", which is consistent with applicants' Figs. 1, 3, 6 and 11-13, showing a conductor having a three-dimensional helical shape.

Kano et al. '136 discloses a spiral conductor lying on a two-dimensional planar surface, and does not disclose or suggest a three-dimensional helical conductor. Senda et al. '170, cited for allegedly disclosing a capacitive element formed of

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insulation and electrode layers, also does not disclose or suggest a helical conductor.

For the foregoing reasons, neither Kano et al. '136 nor Senda et al. '170 contain any teaching, suggestion, reason, motivation or incentive that would have led one of ordinary skill in the art to applicants' claimed invention. Nor is there any disclosure or teaching in either of these references that would have suggested the desirability of combining any portions thereof effectively to suggest applicants' presently claimed invention. Claims 2-9, which depend from claim 1, are allowable for the same reasons as claim 1; claims 10 and 11 are allowable for the same reasons as claim 1; claims 12-16, which depend from claim 11, are allowable for the same reasons as claim 11; claims 18 and 19 are allowable for the same reasons as claim 11; and claims 20 and 21, which depend from claims 10 and 19, respectively, are allowable for the same reasons as claims 10 and 19. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

All claims 1-21 are now proper in form and patentably distinguished over all grounds of rejection cited in the Office

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Action. Accordingly, allowance of all claims 1-21 is respectfully requested.

Should the Examiner deem that any further action by the applicants would be desirable to place this application in even better condition for issue, the Examiner is requested to telephone applicants' undersigned representatives.

Respectfully submitted,

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April 11, 2003

Date



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Attachment: 1 page from Webster's II  
New College Dictionary

CAW:RNW/dlb

Attorney Docket No.: MEIC:070

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# Webster's II

*New College Dictionary*



Houghton Mifflin Company

*Boston • New York*

## spine

The human spine:  
A. cervical vertebrae,  
B. thoracic vertebrae,  
C. lumbar vertebrae,  
D. sacral vertebrae

**e** (spī-nēl') *n.* [Ital. *spinella*, dim. of *spina*, jointed crystals] < Lat. *spina*.] Any of several green, blue, or black minerals with compositional variety being valued as a gem.

**adj.** 1. Lacking a vertebral column. 2. Having lacking courage or will power. — **spine/less-ness** *n.*

**of SPINEL.**  
**adj.** [Lat. *spinescens*, *spinescent*, become thorny < Lat. *spina*, thorn.] Biol. 1. ing or tending toward the form of a spine.

**bs.** Fr. *espinette* < Ital. *spinetta*.] 1. A small, 2. A small harpsichord with a single keyboard. [*fr*-əs] *adj.* [*fr* < Lat. *spina*, thorn.] **SPINY** 1. *n.* [NLat. *Spinifex*, genus name: Lat. *spina*, iake.] An Australian grass, chiefly of the genus *arid* regions and has spiny leaves or seeds. [*ar*] *n.* [Orig. unknown.] *Naut.* A large triangular sail set on opposite the mainsail, used on masting before the wind.

One that spins. 2. An angler's lure that spins over the hub of the propeller in some air-  
rised of a dial and an arrow that is spun to in-  
a board game.

**it'** *n.* 1. Zool. A posterior structure in spiders  
e, containing passages through which silky fil-  
A device for making rayon, nylon, and other  
sting of a plate pierced with holes through  
is extruded in filaments.

**pl.** *neys*. [Ofr. *espine*, thicket < Lat. *spina*,  
thorn.] Chiefly Brit. A small grove.  
1. The process of making fibrous material into

A machine that draws and twists fibers into  
spindles.

A spinning machine having several spindles.  
A device for making yarn or thread, consisting  
in wheel and a single spindle.

**'n** 1. Something, as a product, derived from  
more or less unrelated : BY-PRODUCT. 2. Some-  
earlier work, esp. a television show starring a  
popular minor role in an earlier show.

**di.** [Lat. *spinus* < *spina*, thorn.] **SPINY** 1 < a  
nose/ly *adv.* — **spi-nos/i-ty** (-nōs/i-tē) *n.*  
1. *tek'* *tal* *adj.* Of or relating to the spinal cord

**lj.** 1. Like a spine or thorn. 2. Having spines or  
tiny.

The rearward projection from the arch of a ver-  
tebrae forms the spine.

**n.** [ME *spinnester* < *spinnen*, to spin.] 1. A  
need single beyond the conventional age for mar-  
an. 3. A woman whose occupation is spinning.

**n.** — **spin/eter-ish** *adj.*  
(*spin-thār'* i-skōp') *n.* [Gk. *spintharis*, spark +  
observing individual scintillations produced by  
sisting of a tube with a magnifying lens at one  
end screen and a speck of radioactive salt at the  
— **scop/ic** (-skōp'ik) *adj.*

**n.** [Lat. *spinula*, dim. of *spina*, thorn.] Bot. A

— **lōs'** also **spi-nu-lous** (spī'nyā-las) *adj.* 1.  
aped like a spinule.

usoidal wave of quantized energy propagated

through a substance as a result of shifts in atomic magnetic fields as  
a response to outside stimuli.

**spin-y** (spī'nē) *adj.* **i-er, -i-est.** 1. Bearing or covered with spines,  
thorns, or similar stiff projections. 2. Shaped like a spine. 3. Difficult  
troublesome < *spiny problems* > — **spin/i-ness** *n.*

**spiny anteater** *n.* The echidna.  
**spiny-finned** (spī'nē-fīnd') *adj.* Having fins supported by sharp,  
spiny, inflexible rays.

**spiny-head-ed worm** (spī'nē-hēd'ed) *n.* Any of various worms  
of the phylum Acanthocephala, endoparasitic to vertebrates and  
characterized by a cylindrical retractile proboscis bearing many rows  
of hooked spines.

**spiny lobster** *n.* Any of various edible marine decapod crustaceans  
of the family Palinuridae, having a spiny carapace and lacking the large  
pincers characteristic of true lobsters.

**spiny-rayed** (spī'nē-rād') *adj.* Spiny-finned.

**spir-a-cle** (spī'r-ə-kəl, spī'r-ə) *n.* [Lat. *spiraculum*, breathing hole <  
spīr-are, to breathe.] 1. Zool. A respiratory aperture, esp.: a. Any of  
several tracheal openings in the exoskeleton of an insect or spider. b.  
small respiratory opening behind the eye of fishes, as sharks, rays,  
and skates. c. The blowhole of a cetacean. 2. Geol. A small volcanic  
vent formed by gases on a lava flow. 3. An aperture through which air  
is admitted and expelled. — **spi-rac-u-lar** (spī-rāk'yə-lar, spī-  
adj.)

**spi-rac-a** (spī-rē'ə) *n.* var. of SPIRAE.

**spiral** (spī'ral) *n.* [Med. Lat. *spiralis* < Lat. *spira*, coil < Gk. *speira*.]  
1. The locus in a plane of a point moving around a fixed center at a

monotonically increasing or decreasing distance from the center. 2. a.  
The three-dimensional locus of a point moving parallel to and about a  
central axis at a constant or continuously varying distance : HELIX. b.  
Something shaped like such a curve < *spirals of smoke* > 3. The course  
of flight path of an object rotating on its longitudinal axis. 4. A con-  
tinuously accelerating increase or decrease < the wage-price spiral >

**adj.** 1. Of or resembling a spiral. 2. Coiling in a constantly changing  
plane : HELICAL. 3. Circling around to form a series of constantly  
changing planes. — **v.** **-r-aled, -ral-ing, -rals** or **-ralled, -ral-  
ing, -rals.** — **vi.** 1. To take a spiral form or course. 2. To rise or fall  
with steady acceleration. — **vt.** To cause to take a spiral form or  
course. — **spi-ral/i-ty** (spī-rāl'i-tē) *n.* — **spi-ral-ly** *adv.*

**spiral binding** *n.* A binding for notebooks and booklets in which a  
cylindrical spiral is passed through a row of punched holes at the edge  
of each sheet.

**spiral galaxy** *n.* A galaxy having a spiral structure.

**spi-rant** (spī'rənt) *n.* [Lat. *spirans*, *spirant-*, pr. part. of *spīr-are*, to  
breathe.] A fricative. — **spi-rant** *adj.*

**spire** (spī'r) *n.* [ME < OE *spīr*.] 1. A top part tapering upward : PIN-  
NACLE. 2. A structure, as a steeple, that tapers to a point at the top. 3.  
A slender tapering part, as a newly sprouting blade of grass. — **v.**  
**spired, spir-ing, spires.** — **vt.** To furnish with a spire. — **vi.** To  
rise taperingly.

**spire** (spī'r) *n.* [Fr. < Lat. *spira*, coil < Gk. *speira*.] 1. A spiral, esp. a  
single turn of a spiral : WHORL. 2. Zool. The area farthest from the  
aperture and nearest the apex on a coiled gastropod shell.

**spire-a** also **spi-rac-a** (spī-rē'ə) *n.* [Lat. *spiraea*, meadowsweet <  
Gk. *speira* < *speira*, coil.] A plant or shrub of the genus *Spiraea*,  
including the bridal wreath, hardhack, and meadowsweet, with small  
white or pink flower clusters.

**spi-reme** (spī'rēm') also **spi-rem** (-rēm') *n.* [G. *Spirem* < Gk.  
*speirēma*, coil < *speira*.] Biol. 1. The tangle of filaments that appears  
at the beginning of prophase in meiosis or mitosis. 2. One of the fil-  
aments appearing in meiosis or mitosis.

**spi-rif-er-ous** (spī-rīf'ər-əs) *adj.* [*spīr*(ē) + *-ferous*.] Having a spi-  
ral structure or spiral parts.

**spi-ril-lum** (spī-rīl'əm) *n.*, pl. **-ril-la** (-rīl'ə) [NLat. *Spirillum*, gen-  
us name, dim. of Lat. *spira*, coil < Gk. *speira*.] A flagellated aerobic  
bacteria of the genus *Spirillum*, with an elongated spiral form.

**spīr-it** (spī'it) *n.* [ME < AN < Lat. *spiritus*, breath < *spīr-are*, to  
breathe.] 1. The vital principle or animating force traditionally be-  
lieved to be within living beings. 2. The soul, considered as departing  
from the body of a person at death. 3. **Spirit.** The Holy Ghost. 4.

**Spirit.** Christian Science. God 1c. 5. A supernatural being. 6. a. The  
part of a human being associated with the mind and feelings as dis-  
tinguished from the physical body. b. A person's essential nature. 7. A  
person as characterized by a stated quality < a bold spirit > 8. A spe-  
cific inclination or tendency. 9. **spirits.** An emotional state. 10. A  
particular emotional state characterized by vigor and animation. 11.

Strong loyalty or dedication. 12. The predominant mood of an occa-  
sion or period < the spirit of 1776 > 13. The real sense or significance  
of something < heed the spirit of the law > 14. **often spirits.** An al-  
cohol solution of an essential or volatile substance. 15. **spirits.** An

alcoholic beverage. — **vt.** **-it-ed, -it-ing, -its.** 1. To carry off mys-  
teriously or secretly < kidnappers who spirited the child off > 2. To im-  
part courage, animation, or determination to : INSPIRIT.

★ **syns:** SPIRIT, BRIO, DASH, ÉLAN, ESPRIT, LIVELINESS, PEP *n.* CORE

**boot-** you out th thin th this ū cut ūr urge y young

you abuse zh vision ə about, item, edible, gallop, circus

meaning : a lively, emphatic, eager quality or manner < worked with  
extraordinary spirit >

**spir-it-ed** (spī'rī-tēd) *adj.* 1. Full of or marked by animation, vigor,  
or courage < a spirited discussion > 2. Having a specified mood or na-  
ture < low-spirited > — **spir-it-ed-ly** *adv.* — **spir-it-ed-ness** *n.*

**spir-it-ism** (spī'rī-tīz'm) *n.* SPIRITUALISM 1a. — **spir-it-ist** *n.*  
— **spir-it-is'tic** *adj.*

**spirit lamp** *n.* A lamp using alcohol or other liquid fuel.

**spir-it-less** (spī'rī-tlīs) *adj.* Devoid of energy or enthusiasm : LIST-  
LESS. — **spir-it-less-ly** *adv.* — **spir-it-less-ness** *n.*

**spirit level** *n.* LEVEL 7a.

**spirit of wine** *n.* Ethyl alcohol.

**spir-it-ous** (spī'rī-təs) *adj.* 1. Spirituous. 2. Archaic. Refined : pure.

**spirits of turpentine** also **spirit of turpentine** *n.* TURPEN-  
TINE 1.

**spir-i-tu-al** (spī'rī-tchō-əl) *adj.* 1. Of, relating to, consisting of, or  
having the nature of spirit. 2. Of, concerned with, or affecting the soul.  
3. Of, from, or relating to God : DEIFIC. 4. Of or belonging to a church  
or religion : SACRED. 5. Relating to or having the nature of spirits :  
SUPERNATURAL. — *n.* 1. a. A religious folk-song of African-American  
origin. b. A work composed in imitation of a spiritual. 2. **often spir-  
itu-als.** Religious, spiritual, or ecclesiastical matters. — **spir-i-tu-  
al-ly** *adv.* — **spir-i-tu-al-ness** *n.*

**spir-i-tu-al-ism** (spī'rī-tchō-əl-iz'm) *n.* 1. a. The belief that the  
dead communicate with the living, usu. through a medium. b. The  
practices or doctrines of those holding such a belief. 2. A philosophy,  
doctrine, or religion emphasizing the spiritual rather than the mate-  
rial. — **spir-i-tu-al-ist** *n.* — **spir-i-tu-al-is'tic** *adj.*

**spir-i-tu-al-i-ty** (spī'rī-tchō-əl'i-tē) *n.*, pl. **-ties.** 1. The state,  
quality, or fact of being spiritual. 2. The clergy. 3. **often spir-itu-  
al-ities.** Something, as property or revenue, belonging to the church or to  
a cleric.

**spir-i-tu-al-ize** (spī'rī-tchō-əl-iz') *vt.* **-ized, -iz-ing, -iz-es.** 1.  
To impart a spiritual nature to. 2. To invest with or treat as having a  
spiritual sense or meaning. — **spir-i-tu-al-iz-a-tion** *n.* — **spir-i-  
tu-al-iz'er** *n.*

**spir-i-tu-al-ty** (spī'rī-tchō-əl-tē) *n.*, pl. **-ties.** Spirituality.  
**spir-i-tu-el** also **spir-i-tu-elle** (spī'rī-tchō-əl', spī'rē-tō-əl',  
-tū) *adj.* [Fr., spiritual.] Having or evidencing a refined mind.

**spir-i-tu-ous** (spī'rī-tchō-əs) *adj.* Resembling or containing al-  
cohol. — **spir-i-tu-os/i-ty** (-ōs/i-tē), **spir-i-tu-ous-ness** *n.*

**spiro-** *pref.* [*fr* < Lat. *spīr-are*, to breathe.] Respiration < *spirometer* >

**spi-ro-chete** also **spi-ro-chaete** (spī'r-ə-kēt') *n.* [NLat. *Spiro-  
chaeta*, genus name : Lat. *spira*, coil + Lat. *chaeta*, bristle < Gk. *khai-  
tē*, long hair.] Any of various slender, nonflagellated, twisted  
microorganisms of the order Spirochaetales, many of which are path-  
ogenic, causing syphilis and other diseases. — **spi-ro-chet'al**  
(-kēt'əl) *adj.*

**spi-ro-che-to-sis** (spī'r-ə-kēt-ō'sis) *n.* [SPIROCHETE] + *-OSIS*.] A  
disease, as syphilis, caused by a spirochete.

**spi-ro-graph** (spī'r-ə-grāf') *n.* An instrument for registering the  
depth and rapidity of respiratory movements. — **spi-ro-graph'ic**  
*adj.* — **spi-ro-graph'i-cal-ly** *adv.* — **spi-ro-graph'ic-ly** (*spī-  
rōg'rā-fē*) *n.*

**spi-ro-gy-ra** (spī'r-ə-jī-rā) *n.* [NLat. *Spirogyra*, genus name : Lat.  
*spira*, coil + Gk. *gyros*, ring.] A freshwater alga of the genus *Spirogyra*,  
having chloroplasts in spirally twisted bands.

**spiro-oid** (spī'roid') *adj.* Like a spiral.

**spi-rom-e-ter** (spī-rōm'ē-tar) *n.* An instrument for measuring the  
volume of air entering and leaving the lungs. — **spi-ro-met'ric** (-rā-  
mēt'rik) *adj.* — **spi-rom-e-try** *n.*

**spi-ro-no-lac-tone** (spō-rō'nō-lāk'tōn', spī-rōn'ə-) *n.* [SPIR(O)- +  
-no- (of unknown orig.) + LACTONE.] A steroid, C<sub>24</sub>H<sub>32</sub>O<sub>6</sub>, used med-  
ically as a diuretic.

**spirt** (spūrt) *n.* *cf.* v. Chiefly Brit. var. of SPURT.

**spir-u-la** (spī'yə-lə, spī'r-ə-) *n.*, pl. **-lae** (-lē') [NLat. *Spirula*, genus  
name, dim. of Lat. *spira*, coil < Gk. *speira*.] A cephalopod mollusk of  
the genus *Spirula*, with a spirally coiled, partitioned internal shell.

**spit** (spīt) *n.* [ME *spitten* < OE *spittan*.] 1. Expectorated saliva : SPIT-  
TLE. 2. The act of expectorating. 3. Something, as the frothy secretion  
of certain insects, that is felt to resemble saliva. 4. A brief, scattered  
fall of rain or snow. — **v.** **spat** (spāt) or **spit, spit-ting, spits.**

— **vt.** 1. To eject from the mouth. 2. To eject as if by spitting < spat  
out an order > — **vi.** 1. To expectorate. 2. To express contempt or  
animosity by or as if by spitting. 3. To make a hissing or sputtering noise.  
4. To rain or snow in light, scattered drops or flakes.

**spit** (spīt) *n.* [ME < OE *spitu*.] 1. A slender, pointed rod on which  
meat is skewered for broiling. 2. A narrow point of land extending into  
a body of water. — **vt.** **spit-ted, spit-ting, spits.** To skewer on or  
as if on a spit.

**spit-al** (spīt'əl) *n.* [ME *spitel* < Med. Lat. *hospitale*. — see HOSPITAL.]  
A hospital, esp. one for contagious diseases.

**spit-ball** (spīt'bōl') *n.* 1. Paper chewed and shaped into a lump for  
use as a projectile. 2. Baseball. An illegal pitch in which the ball is  
moistened on one side with spit.

**spit curl** *n.* [From the use of saliva to fix the curl.] A spiral curl  
pressed flat against the cheek or forehead.

**spite** (spīt) *n.* [ME, outrage, insult, ill will < OFr. *despite*. — see DE-

ā father ē pet ē be hw which i pit  
ō toe ō paw, for oi noise ō took